

Prof. W. H. Baumer



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THE CONNECTICUT SCHOOL JOURNAL.

NEW SERIES.

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VOL. III, NO. 2.

ST. PAUL'S SCHOOL.—No. II.

BY MISS A. B. BERARD, WEST POINT, N. Y.

Colet endowed his school by placing in trust for it in the hands of the Mercer's Company certain estates yielding a yearly income of over 120 pounds. During the three centuries and a half which have elapsed since these estates in Bucks were thus given for the benefit of St. Paul's School, their annual income has increased to 12,000 pounds, with the assurance of still further augmentation.

The Founders' intentions respecting the government, and course of study for his School are fully set forth in "The Statutes of St. Paul's School," which he drew up with his own hand. These are so instructive and interesting withal that one can hardly consent wholly to exclude them, even, in a very brief history of this Foundation.

After announcing in the Prologue the establishment of the School, and declaring the guardianship thereof to be entrusted into the hands of "the most honest and faithful Fellowships of THE MERCERS OF LONDON," he adds: "And, for because nothing can continue longe and endure in good ordre without Lawes and Statutes, I, have expressed and showed my minde what I wolde should be truly and diligently observed and kepte of the School Maister, and Surmaister, and Chapelyn, and of the Mercers, Governours of the School, that in this boke may appere to what intent I founde this Schole."

"In the Grammar Schole shall be firste an hyghe Maister. This hyghe Maister, in doctrine, learninge, and teachinge shall directe all the Schole. This Maister shall be chosen by the Wardens and Assistance of the Mercery. A man hoole in body, honest, vertuous, and learned in good and cleane* Laten literature, and also in Greke, yf such may be gotten; a wedded man, a single man, or a Preste that hath no benefice with cure, nor benefice that may lett† his due business in the Schole.

The Mercers shall assemble together in the Schole-house, with such advice and counselle of

good lettered and learned men as they can get; they shall choose this Maister, and give unto him his charge, saying unto him on this wyse:

"*Sir*, we have chosen you to be Maister and Teacher of this Schole, to teache the children of the same not all only good literature, but allso good maners, certifieing you that this is no rome of Continuance and Perpetuite, but upon your dewtie in the Schole. And every yere at *Candle Masse*,‡ when the Mercers be assembled in the Schole-house, ye shall submit you to our examination, and founde doinge your dutie accordinge, ye shall continue, otherwise reasonable warned, ye shall contente you to departe."

After specifying the High Masters' lodgings, it continues: "All these lodgings he shall have free without any payment, and in this lodging he shall dwell, and keep householde to his power. His wagis shall be a mark a weke, and a Lyvery gounce of four nobles delivered in cloth."

"Yf the Maister be syke of sykeness incurable, or fall into such age that he may not conveniently teache, and hath bene a man that longe and laudably hath taught in the Schole, thanne let another be chosen, and by the discrete charitie of The Mercery let there be assigned to the old Maister a reasonable livinge of Ten Pounds or otherwise as it shall seeme convenyent, so that the old Maister after his longe labor in no wise be lefte destitute. Yf the Maister be syke of sikeness curable, yet neverthesse I will he shall have his wages, and in suche sikeness yf he may not teache, let hym reward the Under Maister for his more labor somewhat according. Yf the Under Maister be in literature and in honest lyfe accordinge, then the Hygh Maister's rome vacante, let him be chosen before another."

Then follow the directions for the appointment, duties and provisions of a Sur-Maister which are of similar character with those for his superior the High Maister. The provision for a Chapelyn comes next. "There shall be also in the Schole a Preste, that dayly as he can be disposed, shall sing masse

* Pure.

† Hinder.

‡ Feast of the Purification, Feb. 2d.

in the Chappell of the Scole, and pray for the children to prosper in good life and in good literature, to the Honour of God and Our Lord Christ Jesu. At his masse, when the bell in the Scole shall knyll to sacringe, then all the children in the Scole knelynge in their seats, shall, with lift upp handes, pray in the time of sacringe. After the sacringe, when the bell knylleth agayne, they shall sitt downe agayne to their bokes learninge. This Preste, some good, honest, and vertuose man, shall be chosen from tyme to tyme by the Wardens and Assistance of the Mercery. He shall teache the children the catechyzon and Instruction of the Articles of the Faythe, and the Ten Commandments in *Inglish*."

Of the scholars Colet ordains: "The Maister shall admit the children as they be offrid from tyme to tyme to the number of One Hundred and Fifty-three, according to the number of the seates in the Scole, but first so that they canne saye the catechyzon, and also that he can rede and write competently, else let him not be admitted in no wise.

A Childe at the first admission, once for ever, shall paye 4d. for wrytinge of his name; this money of the admissions shal the poor scholer have that swepeth the schole and kepeth the seats cleane.

The Children shall come into the Scole in the Mornynge at seven of the clocke, both Winter and Somer, and tarye there untill eleven, and returne againe at one of the clocke, and depart at five. And thrise in the daye they shall say the prayers as they be conteyned in a table in the Scole, that is to say, in the Mornynge and at None, and at Eveninge.

In the Scole, in no tyme in the yere, they shall use talough candell in no wise, but all only wax candell, at the costes of their frendes.

I will they use no cock-fightinge, nor rydinge, about of victorie, nor disputing at *Saint Bartilimewe* which is but foolish babbling and losse of time. I will also that they shall have no *Romedyes*,* excepte the Kyng, or an Archbishopp, or a Bishop present in his own person in the Scole desire it.

All these children shall every *Childermas*† day come to Paulis Church and hear the *Childe Bishop* Sermon, and after be at the Hygh Masse, and each of them offer a penny to the *Childe Bishop*, and with them the Maisters and Surveyors of the Scole.

In general processions, when they be warnid, they shall go twayne and twayne together soberlye;

and not singe out, but say devoutlye, tweyne and tweyne, seven Psalmes with the Letayne."

The Statutes conclude with "What shall be Taught." "As touching in this Scole what shall be taught of the Maisters, and learned of the Scolers, it passeth my witte to devyse and determine in particular, but in general to speak and somewhat to saye my mynde, I would they were taught always in good literature, bothe Latin and Greke, and good autors, such as have the verye *Romayne* eloquence joyned with wisdom, specially Christen autors, that wrote their wisdom with clean and chaste Laten, other in verse or in prose, for my intent is by this Scole specially to increase knowledge and worshippinge of God and our Lord, Christ Jesu, and good Christen life and manners in the children."

There follows a specification of some text-books to be used and authors to be studied, after which he adds with a vehemence which proves that the gentle Dean was not without his literary animosities: "All *Barbary*, all corruption, all Laten adulate which ignorant blinde foles brought into this worlde and with the same hath dystained and poysoned the old Laten speeche, and the veraye *Romayne* tonge, which in the time of *Sully* and *Salust*, and *Virgell*, and *Terence*, was usid, whiche also *Sainte Ferome*, and *Sainte Ambrose*, and *Saint Justen*, and many holy doctors lerned in theyre times; I saye that all such abusio which the later blynde worlde brought in, which more rather may be called *Bloterature* then *Literature*, I utterly abannyshe and exclude out of this Scole, and charge the Maisters that they teche always that is beste, and instruct the Children in Greke and Laten in redynge unto them such autors that hath with wisdom joyned the pure chaste eloquence."

THE CONSOLIDATION OF SCHOOL DISTRICTS.

BY REV. J. G. BAIRD, NEW HAVEN.

The seventh chapter of the School Law enacted in 1872 is entitled, "Of the Consolidation of School Districts." There are some reasons why the phrase, "Union of School Districts," would have been preferable. Many persons hearing the expression, "consolidation of districts," have understood it to mean the uniting of several *schools* into one. Hence it has been supposed that for towns having a sparse population the union of districts is impracticable. But the consolidation provided for

* Play days.

† Holy Innocent's Day, 28th Dec.

in the law relates solely to the *management* of schools. The number and location of the public schools in any town is not necessarily affected by the change in the method of managing them. One of the most sparsely settled towns in the State has for several years conducted its schools on the "Union" plan, to the general satisfaction of all concerned.

"The consolidation of districts" means simply the doing away with all district officers, and the appointment of one committee by and for the whole town, to take charge of all affairs pertaining to its public schools. There may be as many schools, and their location may be the same, after the consolidation as before.

To many persons, this change in the method of managing the schools may appear to be a radical overturning of a venerable and almost sacred usage. But in truth it is a return to the earliest system adopted by our ancestors. The ancient records of New Haven, Hartford and other towns contain many votes, passed in town meetings, for establishing and maintaining schools.

And not only were schools among the *earliest* institutions established on the soil of Connecticut, but for a long period they were *town* institutions. The Connecticut Colony adopted, in 1650, a code which made it the duty of "the Selectmen of every Towne" to "haue a vigilant eye ouer theire brethren and neighbours, to see that none of them shall suffer so much Barbarisme in any of theire families as not to endeauor to teach * * their Children and Apprentices so much Learning as may inable them perfectly to read the English tongue," etc. The same code also provided "that euery Towneshipp within this Jurisdiction, after the Lord hath increased them to the number of fifty housholders, shall then forthwith appoint one within theire Towne to teach all such children as shall resorte to him to write and read." And further, "that where any Towne shall increase to the number of one hundred families or housholders, they shall sett vp a Grammer Schoole, the masters thereof being able to instruct youths so farr as they may bee fitted for the Vniuersity. And if any Towne neglect the performance hereof aboue one yeare, then euery such Towne shall pay five pounds per Annum to the next such Schoole till they shall performe this order."

The point to be specially noticed in this ancient law is this:

The establishing, and in part the maintaining of schools was made the duty of the *towns*, and the

penalty for non-observance of the law was to be inflicted upon the towns. Such an organization as a school district was never heard of in Connecticut until public schools had been maintained for more than 150 years.

The New Haven Colony, in 1656, adopted a code containing provisions similar to those above quoted. When the two colonies were united, in 1665, this code was superseded by that of the Connecticut Colony.

The prominence given to towns in this early legislation respecting schools appears also in the revised codes of 1672 and 1702. A few years after this latter date, in consequence of the increasing division of townships into parishes or societies for ecclesiastical purposes, it was enacted, (in 1717,) "that every society or parish within the Colony shall be obliged to keep a school," under the same conditions as were previously provided by law in respect to towns. For the first 80 years, therefore, the town was the only organization for school purposes recognized in the laws of the Colony. Every town which contained but one parish or society continued to conduct its school as a town.

In 1766, the several towns and societies were authorized "to divide themselves into proper and necessary districts for keeping their schools." This is the first mention of school districts. But these districts were merely subdivisions of the towns and societies, and had no distinct corporate existence. The town or the society was the unit, or as we might say the district, and the districts just mentioned were only sub-districts, such as are now found convenient in towns that are Union Districts. Where more than one school was to be maintained in a town or parish, this division into districts was provided for, but there was as yet no provision for district *organization*. This first appeared in a law passed in 1794, by which school districts were for the first time authorized to lay a tax to build a school house, to locate the same, and to choose a collector. Acts were passed in 1795 and 1798 which took away from towns as such all control over school affairs and transferred it to the former ecclesiastical societies, which were thereafter known, in their relation to schools, as "School Societies." But school districts continued to be merely subdivisions of school societies. The appointment of a committee for each district appears to have become gradually a universal practice. But until 33 or 34 years ago district committees were appointed not by the districts, but by the school societies at their annual meetings. The "Act concerning schools,"

passed in 1839, first declared a school district to be "a body corporate," authorized to receive, hold and convey property for school purposes, and to appear as a corporation in legal proceedings before the courts. It is believed that no State except Connecticut has ever made a school district to be a "body corporate." The act last referred to (1839,) was the first which authorized districts to choose their own committees. This privilege of local self-government, to which some are disposed to cling with unyielding tenacity as the bulwark of their liberties, had no existence until one generation ago. For two hundred years Connecticut maintained a system of public schools, equal to any in the world, and yet no district could so much as choose its own committee.

The act of 1839 marked the extreme limit of the subdivision of authority and responsibility in school affairs. For nearly twenty years the tendency has been to return toward the system originally adopted by our fathers. In 1854, towns were required to raise by town tax, a specified amount for maintaining schools. The law of 1700 on that subject had been virtually repealed since 1820. In 1856, School Societies were abolished, and their property and obligations were transferred to the towns. This was a long step toward the original method. In 1865, towns were authorized to consolidate all their districts into one, provided, a majority of the districts consented to such consolidation. No town availed itself of this opportunity, and this law was repealed in 1871.

A law passed in 1866 authorized any town to unite all its districts by its own action. This law was modified the following year, and again in 1872, and is now in force.

Under this law and its modifications, several towns have abolished their districts, and the number is becoming larger each year.

In 1866, four towns accepted the new law, and united their districts, viz: Derby, Naugatuck, New Canaan and Salisbury. Of these towns, all except the last rescinded their acts of union within a year, before they had given the new system a fair trial. Salisbury continued a Union District until October 1870, when at the annual town meeting the friends of the old order of things seized the opportunity afforded by a very stormy day, and a consequent small attendance, to return to the district system.

In 1867, Branford, Seymour and Windsor Locks, constituted themselves Union Districts, and such they still remain.

In 1868, New London united its districts, and this union continues in force.

In 1869, Clinton and Plainville took the same course. The latter town had just been organized. It retained the union system, amid much opposition, till 1872, when the former districts were re-established.

In 1870, Essex, Killingworth, Saybrook and Westport consolidated their districts, and their votes to do so are still in force.

In 1871, East Haven; and in 1872, Prospect, Old Saybrook and Stamford, abolished their districts. Possibly other towns, not yet reported, have also taken the same action. Several towns are known to have given the subject considerable attention, which have not yet thought best to take the new step forward. Further discussion, we are confident, will lead many of them to move onward in this direction.

A LOGICAL OUTLINE OF ARITHMETIC.

All numerical ideas begin with the unit. It is the origin, the basis of Arithmetic. From it as a fundamental idea originate all numbers and the science based upon them. Beginning, then, at the unit, let us see how the science of Arithmetic originates and is developed.

The Unit can be multiplied or divided. This gives rise to two classes of numbers, Integers and Fractions. Integers originate in a process of synthesis, Fractions in a process of analysis. Each Integer is a synthetic product derived from a combination of units; each Fraction is an analytic product derived from the division of the unit. There are therefore, two general classes of numbers, Integers and Fractions, treated of in the science of Arithmetic.

Having obtained numbers by a combination of units, we may unite two or more numbers and thus obtain a larger number by means of synthesis; or we may reverse the operation and descend to a smaller number by means of analysis. Numbers, therefore, can be united together and taken apart; they can be synthetized and analyzed; hence Synthesis and Analysis are the two fundamental operations of Arithmetic. These fundamental operations give rise to others which are modifications or variations of them. Arithmetic, therefore, from its primary conceptions, consists of but two things;—to increase and to diminish numbers, to unite and to separate them. Its fundamental operations are Synthesis and Analysis.

To determine when and how to unite and when and how to separate, we employ a process of reasoning called Comparison. This process compares numbers and determines their relations. Synthesis and Analysis are mechanical processes; comparison is the thought

process. Comparison directs the original processes, modifies them so as to produce from them new ones, and also gives rise to other processes not contained in the original ones. It is, in other words, by this thought process working upon the idea of number, that the original processes of synthesis and analysis are directed and modified; that other processes are developed from them, and that new and independent processes arise, and the science of Arithmetic is developed. Comparison, therefore, in Arithmetic as in Geometry, is the process by which the science is constructed, the process by which the learner unlocks its rich storehouse of interest and beauty.

Arithmetic, it is thus seen, consists fundamentally of three things: Synthesis, Analysis, and Comparison. Synthesis and Analysis are fundamental operations, suggested in the formation of numbers; Comparison is the fundamental thought process which controls these operations, eliminates their potential ideas, and develops other divisions of the science growing immediately out of the fundamental operations, and thus determines the logical character of the science of Arithmetic.

SYNTHESIS.—A general synthesis is called *Addition*. A special case of the synthetic process of Addition, in which the numbers added are all equal, their sum receiving the name of product, is called *Multiplication*. The forming of *Composite Numbers* by a synthesis of factors, which may be called *Composition*; *Multiples*, formed by a synthesis of *particular* factors; and *Involution* by a synthesis of *equal* factors, are all included under Multiplication. Hence, since Involution, Multiples, and Composition, are special cases of Multiplication, and Multiplication is itself a special case of Addition, the process of Addition includes all the synthetic processes to which numbers can be subjected.

ANALYSIS.—A general analysis, the reverse of Addition, is called *Subtraction*. A special case of Subtraction, in which the same number or equal numbers are successively subtracted with the object of ascertaining how many times the number subtracted is contained in another, is called *Division*. *Factoring* is a special case of Division in which many or all of the factors of a number are required; *Evolution* is a special case of factoring in which *one* of several *equal* factors is required; and *Common Division* is a case of factoring in which some *common* factor of several numbers is required. The process of Division, therefore, includes the processes of Factoring, Common Division, and Evolution, and since Division is a special case of Subtraction, all of these processes are logically included under the general analytic process of subtraction.

COMPARISON.—By comparison the general notion of relation is attained, out of which arise several distinct arithmetical processes. By comparing numbers, we perceive the relations of difference and quotient, and giving measures to these we have *Ratio*. A comparison of equal ratios gives us *Proportion*. A comparison of sev-

eral numbers differing by a common ratio gives us *Arithmetical* and *Geometrical Progression*. In comparing concrete numbers, when the unit is artificial, we perceive that they differ in regard to the value of the units, and also that we can change a number of units of one species of the same class; and thus we have the process called *Reduction*. In comparing abstract numbers we notice certain relations and peculiarities which investigated, give rise to the properties or principles of numbers. In comparing numbers, we may assume some number as a basis of reference and develop their relations in regard to this basis;—when this basis is a *hundred*, we have the process called *Percentage*.

Thus we obtain a complete outline of the science of numbers, and perceive more clearly the logical relations of the divisions of the science. Arithmetic is conceived as based upon the two fundamental operations, synthesis and analysis, these operations being controlled by comparison, which develops new processes from these and from itself. The whole science of pure Arithmetic is the outgrowth of this triune basis, Synthesis, Analysis, and Comparison. The rest of Arithmetic consists of the solution of Problems, either real or theoretic, and may be included under the head of Applications of Arithmetic.

This conception of the subject is new and important. It has been heretofore held that addition and subtraction comprehended the entire science of Arithmetic; that all other processes are contained in them, and are an outgrowth from them. This is a fallacy which, among other things, has led logicians to the absurd conclusion that there is no reasoning in Arithmetic. Assuming that there is no reasoning in the primary processes of synthesis and analysis, and that these primary processes contain the entire science, they naturally conclude that there is no reasoning in the science itself. The analysis of the subject given here dispels this error and exhibits the subject in its true light. Synthesis and Analysis are seen to be the primary mechanical processes; Comparison, the thought process, touches them with her wand of magic and they germinate and bring forth other processes having their roots in these primary ones. Comparison also becomes the foundation of processes distinct from those of synthesis and analysis, processes which cannot be conceived as growing out of Synthesis and Analysis, but which have their root in the thought process of the science,—in Comparison.

It is believed that the above view of Arithmetic must tend to simplify the subject, and that much clearer notions of the science will be attained when these philosophical relations are apprehended. A general view of the subject is represented by the following analytical outline:

Logical Outline of Arithmetic.	I. Synthesis.	{ Addition. Multiplication.	{ Composition. Common Multiple Involution.
	II. Analysis.	{ Subtraction. Division.	{ Factoring. Common Divisor. Evolution.
	Comparison.	{ 1. Ratio. 2. Proportion. 3. Progression. 4. Reduction. 5. Properties of Numbers. 6. Percentage.	

—EDWARD BROOKS in the *National Teacher*.

HISTORY OF PLAINFIELD ACADEMY. NO. V.

BY REV. L. BURLEIGH.

Mr. Witter's health had become much impaired by intense application to study, and by his arduous labors, with inadequate assistance in the instruction of his numerous pupils; and in the spring of 1831, he retired from the office of Principal.

During the three following years the office was held successively by Rev. Edward P. Humphrey, D.D., James Humphrey, Esq., late member of Congress from Brooklyn, N. Y., and Rev. John Keep. The Academy under these gentlemen and under their able assistant teachers, continued in a prosperous condition, the attendance being about 100 different pupils during the year, one-third of whom were studying the Languages.

Among those who went from the Academy about this time and graduated at the various colleges were Abraham Payne, Esq., of Providence; Jeremiah O. Carr, Elijah Baldwin, M. D., Andrew G. Lippitt, Esq., of New London; William Coit, Esq., of Brooklyn, L. I., and Rev. James Averill.

Mr. Averill was a native of Griswold, Conn., and graduated at Amherst; he took his theologic course at the Yale Theological School. He was pastor for eight years of the church at Shrewsbury, Mass., and of the church at Plymouth Hollow, Conn., for ten years, ending in 1862. He was appointed Chaplain of the 23d Regiment Infantry, C. V., on the 10th of October the same year. This was a nine months regiment and had its field of service in the extreme south.

The voyage to Louisiana was very trying to Mr. Averill's health, and the malaria of the climate greatly aggravated his tendency to disease. He refused to leave his post, and on the 28th of May, 1863, he was prostrated by fever, which succeeded an attack of fainting. He sunk rapidly under the power of disease and died June 11, 1863.

In the spring of 1834, Mr. Witter resumed his place as Principal and held it until the spring of 1837; making the whole period of his continuance in the office about eleven years. He continued private instructions at his home with some regularity for several years after leaving his more public educational position.

A large number of Mr. Witter's pupils graduated at college. It would be impossible at this date to reproduce a complete list of them, but many well-remembered names may be recalled; among them are the following: Hon. Francis Fel-

lows, Stephen W. Meech, Joseph H. Gallup, Robert H. Wickham, Rev. Edward J. Fuller, Francis Porter, Andrew M. Brown, James W. Gordon, at one time Lieut. Governor of Michigan. Paul S. Park, Charles E. Thompson, Charles McDermott, William Strong, member of Congress; Rev. Warren B. Dutton, Rev. Abraham P. Nott, Rev. William D. Tubbs, Nathan Belcher, member of Congress; Rev. James A. Bolles, D.D., Joshua Smith, Charles Sabin, Esq., George Cole, Jonathan C. Perkins, Edward A. Bradford, of New Orleans; Nathan F. Dixon, member of Congress from Rhode Island; Alfred Perkins, Rev. Samuel G. Buckingham, of Springfield, Mass.; Rev. Jas. T. Champlin, Professor at Waterville College; Luther Robinson, William P. Eaton, Esq., George M. Brown, Esq., Rev. William R. Babcock, Romeo Austin, Rev. Joseph F. Smith, Professor in Auburn Seminary; Rev. Silas B. Randall, Rev. Azel D. Cole, D.D., President of Nashotah College, Wisconsin; William W. Selfridge, Daniel L. Harris, widely known as a civil engineer and bridge builder; Lemuel T. Downing, William W. Rodman, John B. Dwight, Elisha B. Sprague, Rev. Isaac Day, William H. Tiffany, Rev. Albert Paine, Prosper K. Hutchinson, M. D., late of Coventry R. I.; Rev. Daniel D. Frost, James McL. B. Dwight, Ebenezer Spalding, James Monroe, Professor at Oberlin, more recently Consul at Rio Janeiro, and now member of Congress from Ohio; William Kinne, eminent as Principal of the New Haven High School, and still a teacher in another position; Nathaniel Shipman, Esq., Hartford; Rev. G. B. Wilcox, Timothy Dwight. Several of the last named gentlemen pursued their studies with Mr. Witter, after he had retired from the Academy.

Beside those who graduated at College, many of Mr. Witter's pupils occupy, or have filled important stations in society or are distinguished as professional men, or in their various departments of business.

Among the gentlemen who were assistants to Mr. Witter during his continuance, may be mentioned Rev. Hiram A. Tracy, Rev. Lemuel Foster, Rev. Romulus Barnes, Rev. Warren B. Dutton, Rev. Daniel Hunt, late of Pomfret; Orrin P. Gilbert, Samuel B. Phillips, Edmond Johnson, and Joseph H. Gallup.

The total number of pupils under Mr. Witter's tuition during his eleven years in the Academy was near one thousand. After resigning his office of Principal he continued for several years to fit young men for college; but as increasing infirmi-

ties multiplied upon him he gradually relinquished his favorite profession and in home quiet waited his departure.

He was wont modestly to say of his achievements when estimating the amount of his labors, "I think I must have added about six acres to the field of intellect." He might have justly claimed much more, as few educators have been so successful in cultivating and expanding the youthful mind and inspiring an ardent love for the higher classics.

Thousands of anecdotes are told of him which would be well worth compilation as gems of wisdom or wit or rare humor. He died Dec. 30, 1858, aged 73.

He will long be remembered as an exact, careful and thorough teacher, and good disciplinarian. His pupils entered College with habits of critical exactness that greatly aided them in their entire course.

Since the resignation of Mr. Witter, most teachers have been of short continuance in the school, and several times the school has been for months suspended; and at no time has its attendance since 1820 been as great as during the first twenty years of its history.

WORD STUDY.—NO. II.

BY PROFESSOR H. N. DAY, NEW HAVEN.

The inner content of the word, as we have stated, is thought. The word expresses always a movement or phase of the mind—expresses idea;—but this mental movement or state, this idea, is neither feeling nor will. Thought is pervaded more or less both by feeling and will; it is so much modified by these sometimes as to assume from them distinguishable character, so as to warrant and require classifications founded on such modifications. Feeling and will, thus, enter sometimes so far into thought expressed in word as to give rise to distinct forms of speech. But it is ever the thought-element which forms the proper content of the word. So soon, therefore, as this element becomes overpowered and lost in feeling or will, or so soon as feeling or will becomes the ruling element in a vocal utterance, the utterance is no longer a proper word. Words, thus, shade away from expressions of pure thought to expressions in which feeling is very prominent; but so soon as the boundary of thought is passed and the utterance is from the domain of feeling, we have ejaculations, which as they necessarily appear at times in speech, are recognized as in the sentence, but are not ranked as proper words. Such are the so called *interjections*, which vary from expressions of pure feeling to expressions of feeling more or less modified by thought. We have accordingly a dis-

tinction between interjections and other parts of speech exactly analogous to that between feeling and thought. If the feeling predominate and characterize the expression, it is an interjection; if thought predominate, it is a proper word.

The content of the proper word is ever thought; it is *discursive* thought, if that redundancy may be allowed. By *discursive* as applied to an act of intelligence, we denote that full and perfected form of the intelligence in which its object is recognized as a subject with attributes. Its proper primitive form is the judgment, the constituent elements of which are familiarly known as the subject, the predicate, and the copula.

Every proper word is thus essentially discursive in its nature. It implies immediately or remotely, a subject, a predicate, and a copula. There can be no subject-word which does not necessarily imply these last named constituents of thought, any more than there can be hills without valleys. And all attribute-words, as also all form-words, however limited the sphere of their use, equally partake of this discursive nature, as truly as every rootlet, every leaflet, every veinlet participates in the nature of the tree or plant. This discursive nature of the word is fundamental, and should never be overlooked in the study of language or discourse.

The fundamental laws of words accordingly must be found in the laws of thought—of discursive thought. The forms of thought give rise to all the forms of proper words. Interjections and expletives are of course not embraced in this statement. They are not proper words, and cannot therefore come into consideration in the grammatical analysis of the sentence. The personal pronouns, also, as will be noticed, are not embraced in it. With these exceptions there are no forms of proper words which are not forms of thought. Hence the philosophical study of words must begin with the study of the forms of thought, as the study of the derivative can be successfully prosecuted only in the light of the nature of the primitive. All word-forms find their true and satisfactory explanation in the nature of the thought form which they respectively embody and express. Their true function in speech is in this defined and illustrated.

The parts of speech, so denominated in grammar, are thus precisely determined in number, and in their respective nature and use, as the outward or vocal expressions of the parts of thought. The most fundamental distinction in thought as an act of intelligence or of mind is that of thinking subject and object thought; and the corresponding most fundamental distinction in words, which are utterances of the thoughts of one person to another person, is that of those denoting the speaker, the person spoken to, and the object spoken of. This is the primitive function of the grammatical pronoun; and that conception of it which regards it only as a makeshift to prevent repetition or which confounds it with the noun as an expression of an object of

thought is radically erroneous. The proper pronominal element in speech is to be widely separated from the other elements in nature, in origin, in form, in history.

Leaving this most fundamental distinction in language for the time out of view, and confining our attention to the sentence generally as the verbal expression of thought without the proper personal element, we shall at the very start recognize the fact that just as the primitive and normal form of all thought—the judgment—contains three co-ordinate elements, so the sentence which is but the articulate expression of the judgment, contains three co-ordinate elements exactly corresponding—the subject of which something is thought or said, the attribute which is thought or said of that subject, and the copula which expresses the thinking or the saying itself. These three are necessary elements in every sentence; they are coordinate; they are complementary or exhaustive elements. They accordingly indicate the only true and safe analysis of the sentence. The analysis of the German grammarian, K. F. Becker, which once had considerable influence in Germany and still finds some favor in this country, giving the predicative, the attributive, and the objective combinations as the three comprehensive elements of the sentence is unphilosophical, being grounded on accidental external forms, not on the thought as expressed, and is as one should anticipate, partial, misleading, and inadequate, as a guide to the study of speech.

The most generic distinction of proper words, therefore, is into the three classes of subject words, attribute-words, and copula-words.

The last named class—copula-words—are the last to appear in language. At the origin of language, the copula or thought element is left unexpressed to be supplied by the hearer. It afterwards appears only as a modification of the predicate or attribute-word. It finally in its completed development in speech, borrows an attribute word, as the word denoting the attribute of being or existing, or of consisting, of equality, or the like. It expresses simply the discursive act of the intelligence in recognizing its object as a subject having certain attributes which it identifies with the subject. These copula words, as distinguished from the subject and the attribute, are liable to be confounded in meaning with the object words from which they are borrowed. There is, for example, no fallacy which has been so fruitful of error in metaphysical speculation as that which consists in mistaking the copula-word *is* for a word denoting real, or objective existence, and thus confounding mere thought-being with the being of reality.

As the copula is the most essential and vital element of the judgment, so the word expressing it is the most essential and vital element of the sentence. Its modifications are expressed in the moods of grammar, which can be correctly defined only as forms expressing modifications of the copula. The generic classification of grammatical moods accordingly is into the simple or un-

modified—the indicative—and the potential or conditional expressing the modification of necessity or contingency, together with those which express the thought as modified by feeling or wish—the optative—or by the will—the imperative. The word containing this copula or asserting element is accordingly the word by pre-eminence and is worthily named the *verb*. It can suffer no modifications of time or tense, for my thinking is ever at the time of thinking, while what I think may belong to the past or to the future.

The verb, which generally contains in itself the attribute with the copula element may of course suffer tense modifications in respect of the attribute which it expresses; but the mood in itself cannot from its very nature suffer any tense modifications.

YOUNG TEACHERS' DEPARTMENT

MONITORS—NO. III.

BY L. L. CAMP, NEW HAVEN.

In my first two articles upon Monitors I explained the plan of appointment and the duties of those selected to aid in discipline, and the general good order of a large school outside of the school-room.

These should be appointed according to their rank in deportment.

Another set of monitors may be used to advantage in many schools.

Let me first, to illustrate what I am going to explain, relate a bit of actual experience in a school in this state. Finding myself one winter placed in a school of one hundred and forty pupils of all ages and grades, from a. b. c. to algebra and Latin all in one room with no assistant teacher, it was utterly impossible to hear all the pupils in all the branches myself. I therefore first took my reading classes and arranged them into five divisions, all the a-b-c-darians in one division and the remainder of the school into four. Selecting eight of my best readers as assistants or monitors, I took about fifty of the pupils who were similar in proficiency, and dividing them into eight divisions, put two divisions on each side of the room in charge of the monitors who had been previously drilled upon the same lesson. At a certain signal each division commenced reciting to the monitor of that division, each pupil reading one verse or one period as the case might be, and in eight or ten minutes each of the fifty pupils had read several verses and been personally drilled upon the whole lesson.

At another signal all stopped reading, and with their monitors stood facing the center of the room.

They then read the lesson through in concert to me, and if any seemed to stumble or falter they were drilled again. Another lesson was given, and the fifty took their seats to give room for another fifty. Never in my experience have I seen more rapid progress than was made by the pupils who recited to monitors during that winter.

The method of appointing monitors of lessons or classes should be as follows:

A record should be kept of each daily recitation and of the monthly examination, which two when added together should give the accurate standing of each pupil in each branch. The pupil who ranks the highest in Arithmetic should be monitor of his class in Arithmetic during the succeeding month or week as the case may be. And the one highest in spelling should be selected as monitor of spelling, etc.

In nearly every well regulated school there is a short time given immediately after the opening exercises, for questions or items of business, which if transacted at that time, will not interrupt the order and regularity of the recitations. During this time, at a certain signal, if any one was absent at the last recitation or for any reason wishes to ask where the lesson is, he should stand and at a sign from his teacher simply say, "First Arithmetic," when the monitor of the First class in Arithmetic immediately stands, and in a clear voice, so that all can hear, says, "First Arithmetic commences with the 23d example on the 100th page and takes 20 examples to be performed and analyzed." They both sit, and no further questions must be asked about First Arithmetic. The same plan is adopted for all the lessons. No pupil need afterward make excuse that he did not know where the lesson was, for everything is made clear and plain, and in two or three minutes all necessary business may be dispatched.

In addition to this, if any child needs assistance about any problem or lesson, and the teacher is busy, the pupil can be sent to the monitor of that particular branch, and very often he can explain the difficulty almost as well as the teacher, sometimes better.

The pupil who stands highest in each branch commands the respect of all his classmates.

Thus, many a time, may an overburdened and care-worn teacher be relieved of much of the annoyance and many of the innumerable questions which children are wont to ask, by a little tact and arrangement of monitors and classes.

MISCELLANY.

HIGHER EDUCATION OF WOMEN IN ENGLAND.

Lately, at a boarding-house, I had an opportunity of talking a good deal with English people of about the average degree of conservatism. Both men and women scoff at the idea that women have as much capacity for thought as men have, as the sheerest absurdity and nonsense. I cited illustrations from our American schools; but they replied that their whole experience in life had proved the contrary, that women were intended to be subordinate to men, and that their education should be conducted with a view to making them the assistants of men, and that men disliked thinking women.

I had never before heard such statements in regard to the weakness of women and the advantage of this weakness as I heard there. It was asserted in regard to women physicians, that they would be most dangerous, and that their jealousies would lead them to poison each other.

I cannot believe that such views were ever set forward in America, nor can I think it is the real belief of the English people; though on all public occasions, where the education of women is discussed, it is very apparent that the general sentiment of the country, upon this matter, is a long way behind that of America.

I attended to giving of prizes at Miss Buss's school, which is conducted very much like our city public schools in America. It has the reputation of being the best middle-class girls' school in London. Miss Buss holds the most advanced views in regard to the education of girls, but from all the speakers of that day, including the Bishop and Sheriff of London, Prof. Seeley, and Sir John Lubbock, not one word was said in favor of educating women, except for the reason that they were to be helpmates of men. One might have supposed that education was of no consequence, if women did not marry.

In the economic section at the British Association, last week, a paper was read on the higher education of girls, by Miss Sheriff, the sister of Miss Groy, who is leading the National Union for the education of girls. The discussion that followed very clearly illustrated the prevalence of the same idea, that women were naturally subordinate to men, and fulfilled their aim in complementing men.

In America we have quite passed by this phase of feeling, and the one nearest to it that we have to contend against is that, as women are almost sure to enter into the voluntary partnership of marriage, a kind of education that cultivates the tastes and sentiments is better suited to the needs of their life than one which more especially develops the reason. It is no longer

contended that women have less intellectual ability than men, but only that the exigencies of life make a different kind of education more valuable to them.

The obstinate prevalence of this belief in the intellectual inequality of the sexes in this country surprises me more and more, as I become better acquainted with English women. It can be explained only as a traditional belief, which very few take the trouble to examine. We are in the habit of believing that American women are better educated than the women of any other country; but I am satisfied that, in comparison with England, it is true for women, only as a similar remark is true of men, viz: that the average intelligence of American women is above that of English women. But, just as England has an immense number of highly educated men, just in the same degree is there an immense number of highly educated women. There is a whole upper stratum, composed of both sexes, with whom we have only single individuals to compare.

All the leisure class in England are highly educated, as far as teaching can contribute to educating them. The boys are under the best tutors or at the best schools, and the girls are under excellent governesses and masters. English parents are too little with the children to have that sentimental fondness that loosens the parental discipline with us. The children are placed almost exclusively under the governess, tutor or master, who holds his place only through successful work. There is no getting free from the daily drill. Education, as well as good manners, is an unexceptional demand of society. No one thinks of avoiding it any more than he would think of avoiding his daily toilet. Not all the boys who go to the schools and universities come out brilliant, but they cannot be kept under the daily drill of masters from the age of six to twenty or twenty-three, and in the constant companionship of educated people, without getting a good deal of mental discipline, and a fair familiarity with a wide range of knowledge.

And, in a similar way, the girls are kept constantly employed with books from the age of six to seventeen or eighteen, with only a few short holidays in a year. No time is wasted. The governess is with them the whole day. She walks with them, and talks with them, and sees that the lessons are never interrupted. They are not educated to make an especial mark in society; but because it is expected, and is one of the essentials in keeping up to the orthodox standard. They have both knowledge and discipline, in a degree that is constantly giving me new surprise. The education has not been given with a view to any definite use, and only those of marked ability are likely to have any desire to use it. As a consequence, it is not likely to be obtruded upon any occasion. American women, with the same amount of knowledge, are much more likely to make it appear. They talk more brilliantly, they express more positive opinions and are likely to show more independence and

originality. They are less trammelled in their expression by national and social conservatism.

English women know less of mathematics, and, perhaps, less science; but they know far more of history and the modern languages, and their acquaintance with literature is incomparably wider than that of American women. But, while they read far more than American women, they seem to me to analyze what they do read less; and, from familiarity with the best models in literature and art, they seem to acquire instructive rather than rational perceptions of what is truly artistic.

Indeed, I have noticed this of Old Country people, in comparison with Americans, that their perceptions in art are more intuitive and less rational than ours, and I have attributed it to their being so constantly in the presence of good models.

English women both use and obtrude their attainments less than we do, but you seldom find an English woman knowing less than you first expect. Even in cases where we would surpass them in conversation, we should be likely to find that they very much surpass us in writing. Uniformly they write graceful letters. The chirography is excellent, and the expression generally faultless.

I have so far spoken of the leisure class. Passing to the lower middle-class, to the shop-keepers, skilled artisans and farmers, the education of the daughters is very inferior. The sons of the shop-keepers and farmers are generally educated for their sphere, that is, without any expectation of their passing into a higher social class; but, to be successful in that sphere, there is a need of especial training. There seems to be no incentive to educate the daughters. Generally they do nothing, if the parents can in any way support them without work. The only object of the parents is to marry them off, and this is not especially promoted by education. English people, in all classes, are conventional, and like what they are used to; new circumstances and surroundings disturb them not a little. The conventional woman of this class is not educated, except into conventionality, poor music and superficial French, and it would be of little avail, for matrimonial purposes, to do more for her. Men are used to those women, and consider them good enough for wives; and so, while the girls have abundant time to acquire fairly good educations, they do not get them, and the money saved from school fees contributes to making the marriage dowry attractive. Thus there are two difficulties in the way of improving the education of girls of this class, viz: the absence of free schools and the absence of a demand for better education. With us, large numbers of the same class remain in school without much thought about the advantages of a better education, simply because they find school and the association of their school companions pleasanter than an idle life at home; and, as there is no attendant expense, parents do not object to indulging them in their choice. Let them be regularly in school, no matter for what

purpose, and the mutual rivalry is likely to keep them up to good work, and, in the end, tastes and aspirations are formed which demand and create new opportunities for work, and result in making education industrially available for women. There are no free schools in England, and just in proportion as schools are moderately cheap, they are not only of little value, but are odiously suggestive of pauperism; and middle and lower class English women are just as chary of their rank and of the circumstances that become them, as the highest aristocrat. Girls, there, cannot be educated except at considerable expense, and an expense which gives no promise of appreciable returns.—MARY E. BEEDY in *Woman's Journal*.

RELICS OF AN EXTINCT RACE NEAR LIVERPOOL.

No relics of primeval man have been discovered within the precincts of the borough, but in the immediate neighborhood there are indications of settlements of a very high antiquity. About three and a half miles from Liverpool Exchange, at the meeting of three townships, stand five unhewn upright stones, the remains of a circle called from time immemorial the "Calder Stones." These stones are noteworthy, not only as a specimen of stone circles to be met with in many other parts of the kingdom, but as offering remarkable examples of the cup and ring carvings occasionally to be met with, presenting almost every known and recognized type of these cuttings. Prof. Sir James Y. Simpson, of Edinburgh, who has written a very interesting memoir on the subject, ascribes these remains to the early stone period, before the introduction of metallic tools, and asserts that the chiselings and carvings can be all easily imitated, even on granite rocks, by flint weapons and a mallet. He maintains that this and similar structures with the relics found in connection with them, "point to a race different from and seemingly anterior to the appearance of the Celtic race in our Islands." If this view (a view held by some of our first archæologists) ultimately prove to be correct, then we have in the Calder stones, within hail as it were of the busy mart and great modern city of Liverpool, a stone structure erected and carved by a Turanian race, who dwelt in this same locality, and lived and died in this same home many long centuries before Roman or Saxon, Dane or Norman, set his invading foot upon the shores of Britain; and possibly anterior to that far more distant date, when in their migrations westward the Cymry and Gael first reached this remote "Isle of the Sea." In July, 1867, in sinking the foundations of some villas at Olive Mount, Wavertree, about a mile from the site of the Calder stones, the workmen came upon the site of an ancient cemetery, in which were found a number of earthenware urns, containing ashes and burnt bones. The pottery was of an extremely rude and archaic type, the paste coarse and thick, abounding in pounded stone;

the only ornamentation the impression of a thong or cord whilst the paste was moist. The only implements found were a few flint arrows and spear heads. Most of the urns were destroyed by the workmen in digging. Two have been saved, with their contents, and are deposited in the Liverpool Public Museum. There can be little doubt that these relics belong to the same prehistoric age as the Calder stones.—*From Memorials of Liverpool,* by S. A. Picton, F.S.A.

THE BIRTHPLACE OF YALE COLLEGE.

From November 11th, 1701, until October 17th, 1716, Yale College, or as it was then called, the Collegiate School of Connecticut, was situated in Saybrook. To be sure, during a part of that time the students, or some of them, were in what is now Clinton, then Killingworth, with the first president, Rector Pierson, or in Wethersfield or Hartford or scattered about the colony like the Indian, who coming into this world before the towns had been divided off, declared that he was born "all along the shore." Nevertheless theoretically the college was in Saybrook and that village has undoubtedly the claim of being its birthplace and early home. It is a queer old place and we fancy that it looked very much the same and that its people acted very much the same, in 1701 as they do in the year of our Lord 1873. The Sound washes its southern shore and the Connecticut hems it in on the east. But that is all a mistake. It never should have been placed contiguous to those waters. The inhabitants care naught for river or sea except as they may drag from them the delicious shad in the spring time. They are not in the least nautical and never go near the shore except for a load of salt hay. A more agricultural community never occupied a seaport. A few miles up the river dwells a real sea-faring people. Or rather, they were sea-faring until protective legislation reduced them to idleness.

Like the other old towns, Hadley, Wethersfield, Windsor, &c., Saybrook has one long, broad and straight street shaded by beautiful trees along its almost entire length. Here solitude and silence reign supreme. The rear part of the houses is occupied, the front part is "kept." Entrance and exit is by the back door save on the occasion of a wedding, a funeral, a sewing society or a visit from the parson. No work is done after six o'clock on Saturday and on Sunday evening the young men go "courting." As there are not more than half a dozen such in town, they have a very soft thing, the proportion of the gentler to the sterner sex being about as three to one. In fact Saybrook is the traditional New England village of Mrs. Stowe and fifty years ago, without its activity and bustle.

One peculiarity of the place is that a very few surnames have to do for a good many people. Moreover the families have so intermarried that nearly every one is related to nearly every one else in town, although

unions of those near akin are, perhaps, less frequent there than in other places. Various are the expedients by which people are distinguished in referring to them. Sometimes all three names of an individual are pronounced; sometimes the first two; sometimes he is called only by his first with a prefix of Mr. We are thinking of one gentleman whom we have always heard spoken of as Mr. Ezra. The fact that he possessed a surname was admitted but as it was of no earthly use to him, being shared with a large portion of his fellow citizens, it was generally overlooked in every day affairs. The necessity of the handle is always observed in well regulated families. A youth of our acquaintance, having been brought up in the way he should go, alludes to a certain notorious drunkard and vagabond—for there are black sheep even in this Arcadia—as Mister Bill Dudley. His parents permit their offspring to degrade the poor creature's name to Bill, both for the sake of convenience and also as one punishment for the many derelictions of the aforesaid William, but they insist upon the prefix.

The old town is a connecting link of the present with the days that were before the Revolutionary War, and the House of Virginia. It is named after Lord Say and Seal and Lord Brook, who took the first steps towards founding the colony. One gentleman owns and cultivates the soil which the founder of his line bought of the Indians when he first set foot on this continent. Until recently the ruins of an old fort marked a spot on the steep river bank near the place where the waters of the Connecticut meet the Sound. Not far from the fort was the grave of Lady Fenwick, the first white woman whose dust was mingled with the soil of this part of the country. About three years ago the building of a new railroad demanded the leveling of the fort and the grave being opened the bones of the lady were found excellently preserved, her golden hair still clinging to her temples. The old fort was garrisoned during the war of 1812. At that time a British fleet lay just outside the bar and blockaded the river. One night the time of the valiant home-guards who occupied the fort expired, and without waiting for the relief they marched away. Very naturally the enemy chose that night for an invasion. Boats filled with armed men rowed by the defenceless fort, frightening the denizens of Saybrook out of their wits. They kept on, however, up to Essex, five miles above, where they burned the shipping, of which there was considerable, and raised hob generally, although without spilling blood, we believe. When they rowed back down the river, the trusty inhabitants of Saybrook had manned the fort, and bringing a cannon to bear by the light of their fires, began to pop at the invaders. Tradition has it that they even hit one boat and disturbed its internal economy. But the Oldest Inhabitant, who if not on the spot was at least not far from it, tells us that he does not believe that the cannonade accomplished anything except to ac-

celerate the retreat of the foe. About two miles north of the scene of this conflict is another point of interest. It is a large flat rock called Obed's Altar where, rumor says, an Indian chief who had become converted to Christianity and had adopted that Christian name, offered a deer as a sacrifice to his new God. Would that space would permit us to dwell upon some of the modern celebrities of the quaint old town, of a famous chariot whose construction must have been coeval with that of Solomon's Temple, judging from its appearance; of Bill Able who serves his fellow citizens with clams and muscles dragged from their beds at all sorts of hours, according to the tide, of "Injun David" and his "to'ther wife," for he rejoices in the possession of many; but he who has followed so far unflinchingly, if any such there be, must long for the end and he shall have it presently.

But the name of Saybrook should be changed to Ichabod, for its glory is departed. The rash hand of "improvement" has broken in upon its quiet. A railroad track passes over the site of the old fort. A large modern hotel, intended for a summer resort, occupies the extreme point of land between cove, river and sea, while neat cottages dot the bleak shore about it. However, the citizens throw all possible obstacles in the way of such innovations and will contend against them to the bitter end.

—Yale Courant.

THE GULF STREAM.

EXTRACTS FROM A PAPER BY W. B. CARPENTER, PRESIDENT OF THE BRITISH ASSOCIATION.

WHAT IT DOES.

There is no topic in Physical Geography which has more interest at the same time, both for the general and for the scientific public, than the Gulf Stream. Our school-books unhesitatingly assert that we owe to it the comparative mildness and equability by which the climate of the British Isles is distinguished from that of Labrador on the west and of Russia on the east; and our children grow up, as we did ourselves, in this faith, as if it were an article of established doctrine.

It is mainly to the careful investigations which have been carried out during the last twenty years, under the able direction of the late Professor Bache, by the officers of the United States Coast Survey, that we owe the more exact knowledge we now possess of the origin and early course of the Gulf Stream; whilst its influence on the movement and temperature of the North Atlantic may be studied in the valuable Wind and Current charts recently published by our own Hydrographic Department.

The scientific aspect of the inquiry is of peculiar interest at the present time, in consequence of the remarkable eagerness for Arctic exploration which is showing itself among the Continental nations; the direction

which this is taking being mainly influenced by the persevering representations of the eminent German geographer, Dr. Petermann. For he maintains it to have been completely proved by temperature-observations, that the Gulf Stream runs towards the North Cape, as a "deep, warm, voluminous current," of which part flows north, towards Spitzbergen, while another part runs eastwards, along the coast of Russia and Siberia, as far as Nova Zembla. If this be the fact, it is obvious that the Open Polar Sea, which there are many grounds for believing to lie within the Ice-barrier, is more likely to be reached by following its course to the north-east of Spitzbergen, than by any other mode of access. Dr. Petermann's view, however, is not adopted by the majority of our own Arctic explorers; and it is probable that the British Government will be moved by them to send an expedition up Baffin's Bay, with the hope of making its way into the Polar Sea through Smith's Sound.

ITS CAUSE.

The Gulf Stream is only one of a large number of Oceanic Currents, which are set in action by prevalent Air-currents; its peculiarity depending entirely upon the manner in which the northern portion of the Atlantic Equatorial current, which owes its westward movement to the almost constant propulsive force of the Trade-winds, is embayed in the Caribbean Sea and Gulf of Mexico, and is thence driven out northwards through the narrow Florida Channel. A similar Equatorial Current exists in each of the other great oceans—the Indian and the Pacific. In the former, however, it is considerably modified by the monsoons, or periodical winds of Southern Asia. And at the western border of the latter, while the strength of the current is broken up in the equatorial region by the Indian Archipelago, that portion of it which strikes the coasts of China and Japan is turned by them into a northward direction, and thus forms the counterpart of the Gulf Stream in the North Pacific, known as the Kuro-Siwo, which runs up into Behring's Straits.

But the westerly Equatorial currents are by no means the only movements communicated to the water of the three great oceans by the action of the Trade-winds on their surface. A little consideration will show that, if a portion of the surface-layer of any oceanic area be continually swept onwards in a given direction, the outflow from the part where this drift current originates must be compensated by an inflow from other parts of the area; thus producing a *circulation*, the particular course of which will be modified by the direction of the coast lines and of the prevalent winds in other parts of the basin, but which *must* always bring the water that has been driven from the original head-reservoir of the current back to it again. By due attention to this simple principle, which has been strangely lost sight of by many writers on this subject, by far the larger number of Oceanic Currents can be easily accounted for.

Now the north-east Trade-wind, which is almost constantly blowing over the northern half of the inter-tropical region of the Atlantic, and the south east Trade, which is as constantly blowing over the southern half, together give a westward direction to the vast body of water forming its surface-layer. But that which they give to the water, they lose themselves; so that near the equator, the Trade-winds blow almost in a meridional direction—that is, from the north and from the south respectively; and, as they neutralise each other's action along the line of their meeting (which lies somewhat to the north of the Equator, with variation according to the season), the northern and southern divisions of the Equatorial current are separated by a belt of calms. In this belt a distinct backward or easterly current is occasionally met with, which seems partly of the nature of the "back-water" that is often to be noticed in a stream flowing rapidly past some obstacle, such as a projecting angle of a river-bank, an island, or a ship at anchor; and partly to be an indraught or supply-current, which is one of the "feeders" of the head-water of the main Equatorial current that takes its rise in the Bight of Biafra. The other "feeders" are the current which runs southward along the western coast of Northern Africa, and which is traceable backwards as far north as Cape Finisterre; and the current which runs northward along the southern coast of South Africa, beginning from the Cape of Good Hope.

The main Equatorial Current supplied by the inflow of these constant "feeders," and continually augmented in rate by the propulsive action of the Trade-winds, passes directly across the Atlantic to the coast of South America, and strikes full upon Cape St. Roque, which forms its projecting angle about 5° south of the equator. This divides it into parts, of which the larger or northern division is slanted in a north-west direction along the Guiana coast, towards the Caribbean Sea; while the smaller or southern division is forced to take a decided bend along the coast of Brazil, of which the temperature is decidedly raised by it as far south as latitude 30° . Before reaching the Rio de la Plata, however, the great bulk of this current takes an easterly direction, and flows back towards the coast of South Africa, so as to re-enter the supply-current proceeding northwards from the Cape of Good Hope. The easterly motion of this Southern connecting current appears partly due to the prevalence of westerly winds, sometimes termed the Anti-trades, over this portion of the ocean, and partly to the excess of easterly momentum which any current will have, that is flowing from the Equator towards either Pole. For, as the water of the Equatorial region moves eastwards with the earth, in its rotation on its axis, at the rate of about 1,040 miles per hour, whilst in Latitude 40° it moves at the rate of only 780 miles per hour, it follows that a current flowing from the Equator to latitude 40° , whether north or south, will carry with it an *excess* of

easterly velocity amounting to 260 miles per hour, and will consequently tend to flow eastwards at that rate, if it have lost none of its momentum by friction in its meridional passage.

We have now to follow the course of that northern division of the Equatorial current which is propelled onward into the Caribbean Sea, and ultimately becomes the Gulf Stream. Reinforced in the Caribbean Sea by the equatorial drift impelled by the N.E. Trade directly across from the African coast between the Canary Islands and Cape Palmas, it passes westwards along the northern coast of South America, and strikes the narrow isthmus which connects this continent with Central America. Here it is turned northwards by the Mosquito coast, so as to reach that comparatively narrow passage between the western extremity of Cuba and the promontory of Yucatan, which connects the Caribbean Sea and the Gulf of Mexico; and there is reason to think that here it divides, one portion of it flowing N.E. along the coast of Cuba, past Havana, directly towards the Florida Channel, whilst the other circulates round the head of the Gulf of Mexico, flowing southwards again before it reaches that channel.

SOURCE OF ITS HEAT.

It is commonly believed that the surplus heat carried out by the Gulf Stream, or Florida current into the Atlantic, is mainly due to the powerful action of the sun upon the surface-water of the Gulf of Mexico. But this can only be the case to a very limited extent; for, during a large part of the year, the temperature of the surface-water of the Gulf of Mexico is decidedly *below* that of the Equatorial current and of its continuation into the Caribbean Sea; it being only when the sun is near the tropic of Cancer, that the surface-water of the Gulf is as warm as that which comes into it. There is, however, one important particular in which the Gulf of Mexico, and, in a less degree, the Caribbean Sea differ from the outside Ocean; namely, that their surface-heat extends *much further downwards*. This fact has been lately brought out very prominently by the temperature-observations made in the New York School Ship *Mercury*, on her voyage from Sierra Leone to Barbadoes, thence around the western point of Cuba, and homewards through the Florida Channel. While running across the Atlantic in the month of March, before a steady E.N.E. Trade, the temperature of the Air being from 77° to 83° , the *surface-temperature* of the Sea was found to range from 75° to 80° ; but the temperature at 100 fathoms was no more than 62° , while at 200 fathoms it averaged 52° . Within the Caribbean Sea, however, on the passage along the southern side of Porto Rico, St. Domingo, and Cuba, the *surface-temperature* of the sea was *higher* than that of the Air, ranging from 83° to 86° , while that of the air was between 80° and 84° ; and the temperature at 100 fathoms was 72° , and at 200 fathoms, 62° (in both cases 10° higher than at the same depths in the outside At-

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temperature is just the same as it is at 100 fathoms below the surface, viz., from 56° to 54° ; whilst, in the outside Atlantic, at the same depths, it ranges from about 37° to $36\frac{1}{2}^{\circ}$. The deep water of the Atlantic has a glacial temperature because it has flowed along the Ocean bed from the Polar Area; while the deep water of the Mediterranean has only the coldness of the lowest winter temperature of its surface, because the Strait of Gibraltar is so shallow at its entrance, that the glacial stratum of the Atlantic is entirely excluded. It is clear, therefore; that the glacial stratum, which occupies the deeper portion of the Gulf Stream channel, must be flowing *inwards*; and it is the opinion of the American surveyors, partly based on the temperatures of the successive strata, and partly on the mode in which the sounding-line was drawn away from the perpendicular, that in the Havana section, the warm *outward* current has not more than *one-third* of the entire *depth* of the channel.

But further, the Gulf Stream current does not by any means occupy the entire *breadth* of even the narrowest portion of the channel. All along the Florida coast, the bottom deepens very slowly; and the warm surface stratum, which is nearly motionless, is underlain at a very small depth by cold water, which flows up the banks of the channel just as a cold current of air in a valley flows up the sides of the hills which bound it. This cold band which shows a temperature of 50° or less at the depth of 100 fathoms, whilst in the axis of the stream at the same depth the temperature averages 75° , is about fifteen miles broad, even in the "Narrows," whose total breadth is no more than forty miles; thus leaving only twenty-five miles for the breadth of the true Gulf Stream. That the colder band on the Continental side of the channel is really flowing *inwards*, seems proved by the very significant fact that the Florida Reefs and Keys are slowly but steadily extending *westwards*. During rough weather, the sea about these reefs becomes milky from the stirring-up of the deposit at the bottom; and this "white water" is invariably drifted *inwards*, the matter it carries being deposited along the line of Keys and for some distance to the southward of them.

Now this inflowing cold stratum is a prolongation of the *polar current*, which may be traced all the way from the coasts of Greenland and Labrador, past Newfoundland (where it meets the Gulf Stream), and along the whole Atlantic sea-board of the United States, the climate of which it very considerably modifies. For although partially overlain by the inner edge of the Gulf Stream, so that in summer the surface-temperature may be nearly that of the Stream itself, very cold water is always to be met with at a small depth beneath; and in winter and spring, when the prevalence of N. and N.W. winds brings down the cold surface-waters of high latitudes, the chilling influence of this Polar current makes itself very perceptibly felt along the whole

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for the fact that through this comparatively new geological area the outlet for one of the oldest areas should be found. But this problem is rapidly being solved by fresh discoveries of the ancient life of the seas in the limestones through which Niagara is now wearing its way. The conclusion to which scientific men are led in reference to the future is, that Niagara will eventually dwindle away into a succession of rapids and cascades. But for the sake of those unfortunates who have not visited Niagara, the geologists are pleased to say, that many thousands of years must elapse before the end is reached.

DISCOVERIES IN ROME.

Rev. W. Condict gives in the *Evangelist* some interesting results which have been developed in the prosecution of the archaeological excavations originated in the enterprise of Napoleon III. Desiring to furnish all the original illustration he could to his "Life of Julius Caesar," he bought the Palatine Hill, and commenced digging for relics. After his overthrow at Sedan, he sold out to the Italian Government, who have continued the one good work he commenced, and have also opened excavations at the Forum.

A few weeks ago a marble was opened which throws some light on the disputed question whether the story that Romulus was the first king of Rome is a fact or a myth. It is ancient, and contains a list of the kings, with the name of Romulus on the head.

"But most interesting of all are the excavations made beneath the church of St. Clement. This church was said to be one of the most ancient in Rome, and tradition had it that it was built upon the very spot where once stood the house of the Clement named by Paul in the New Testament—hence its name. But as some doubt was thrown on these statements by the fact that the church seemed to stand too high to be so old—that the debris of so many centuries ought to have left it now considerably beneath the general level, it was determined that excavations should be made. Going down from the pavement of the Sacristy, at a distance of fourteen feet, the workmen came upon an ancient pavement, whose existence was never so much as suspected before. Then burrowing either way horizontally, they found the standing pillars and walls of an ancient church, all record and memory of whose existence had been lost. The whole place is now cleared, and upon the walls the visitor sees the frescoes, still well preserved, and many of them of Bible subjects, beautifully executed. This then is the true ancient church of St. Clement, of historic interest, and is a place no Christian can visit with other than feelings of deepest reverence."

In the rear of this church was found a walled-up door. When this was opened, the well-preserved remains of a private house of the Augustine age were found. It is conjectured that this may have been Clement's house.

THE CONN. SCHOOL JOURNAL.

NEW HAVEN, FEBRUARY, 1873.

EDITORIAL.

PUBLISHERS must excuse us if we make a little raid upon them; for really some of them need a little friendly admonition on one point, and it is our simple duty to speak out. We refer to the flimsy way in which many books, especially school books, are issued from the bindery. We have groaned in spirit, again and again, to see books bearing the imprint of our most eminent publishers, books well written, attractively embellished—books sold for daily use and transportation—literally falling to pieces in our hands after a few days using. Verily some of the most attractive ones hardly hold together while being examined to be reported upon. Several times we have spoken well of the publishers' work on a new issue, only to long to take back our words of commendation, shortly afterwards, when we have looked upon the inexcusable wreck of leaves which a few days handling has occasioned. Sometimes we buy a rose and give it the choicest place in our garden because of its exquisite tint. But a few days experience with it almost induces us to tear it out in disgust because its lovely petals drop apart almost as soon as they open. It is a still worse sensation which comes over us when this happens to a lovely book. A school book especially is "ex-officio" subject to incessant handling, and if worthy of a word of commendation, must be made strong. This is more important than fine illustrations, and when we find an edition, however excellent otherwise, wanting in this respect, we shall refrain from commending it to any teacher.

Let us give a few illustrations of the provoking way in which our binders serve us. We have been enjoying recently some books from an elegant edition of Dickens' Works now being issued by an eminent New York firm. To while away some weary hours we selected Martin Chuzzlewit, in green and gold, and elegantly illustrated. To keep it intact we covered it with strong brown paper, and then it received the most gentle handling of a few days reading, yet before it was read through, it was pretty well in pieces; bunches of leaves dropped out; the covers stood awry, and we sadly put it in an obscure corner of our shelves. A new copy of Colton's Common School Geography used for a few

minutes daily, simply in pointing out localities to a pupil in history, within about four weeks use, has become about as much dismembered as if a flash of lightning had passed through it. "The Chatter-box," an English publication republished in this country, is a choice little book for our children; but alas, in our own family, and in others of our acquaintance, it has dropped to pieces as if it were stitched with mere gossamer. We believe it will pay to get the next copy from the English publishers, as we may count on more conscientious work in their issues.

We have distributed McNally's Geographies fresh from the stores, about a school-room, and within two weeks have had the most scrupulously careful girls in school show us with sad looks, one after another, their dilapidated books—broken-backed from utter weakness, and dropping their loose leaves.

We refrain from more illustrations. Teachers know well the unfortunate truth. Publishers should know it and listen to our entreaties, that they look more rigidly to the work of their binders; that they give us books stitched honestly through and through with the soundest of thread.

ANNALS OF EDUCATION.

STATE NORMAL SCHOOL, NEW BRITAIN.

In order to meet the increasing demand for trained teachers in the state, our Normal School has instituted a change in the order of things, dividing the school year into two terms and sending out a class at the close of each. The graduating exercises of the first class of 1873, took place on Friday, Jan. 17th. Notwithstanding the inclemency of the weather, which prevented many friends from attending, whose presence was expected, a goodly number were present in the morning, and a full house in the afternoon, testified to the interest our people feel in this Institution.

THE EXAMINATIONS.

The morning examinations were held in the Normal Hall. On the platform were seated several distinguished gentlemen, among whom were Prof. D. E. Heickel, of the University of Helsingfors, Finland, who has been sent to this country to examine our system of common school education, President Andrews of Marietta College, Ohio; Secretary B. G. Northrop, Hon. William H. Potter, and Rev. Wm. I. Gage, of Hartford. The devotional exercises were conducted by the Principal of the school. They were followed by a very short ex-

ercise in Physics by the Middle class, conducted by Prof. Dwight.

The Junior class, under the direction of Miss Ella S. Smith, was next examined in Physiology. The topics were taught in a lively, interesting manner by the class, showing careful, thorough study. We were particularly pleased with the promptness with which each pupil recited, no time being lost by hesitation. The various subjects were illustrated by the charts and skeleton lately procured for the Institution.

A fine chorus was then sung by the school, led by Miss Emma M. Goldthwaite, the teacher of music.

The pupils evince considerable enthusiasm in their music, and the effect of their singing has been much improved by the addition of three or four good male voices to the school, the bass and tenor parts being now finely sustained.

The next half hour was devoted to Arithmetic, under the superintendence of Miss Emma M. Goldthwaite. The subject chosen was that of Fractions, and the aim of the class was to show how very clear and simple this topic can be made, when illustrated by a few simple objects or even a few straight lines.

The most attractive exercise of the morning was the one in drawing, conducted by Miss Lettie D. Browning. The class first gave a few object lessons on the different kinds of lines and angles in various positions, after which the originality and ingenuity of the pupils were tested by their being required to combine, first, lines in various ways, and afterward angles to form designs. Thus proceeding step by step, the class at length placed upon the board some beautiful and elaborate designs, which had been originated by the pupils themselves, and which served as specimens of the work of the term. In the use of curved lines and in forming vases and pitchers, the class showed the method of training the eye and the hand to draw correctly simple forms about us. A beautiful picture of the pedal-staff of the piano was drawn by Miss Lucas of "the entering class," who has had this course, however, for a longer time than the other pupils. Miss Browning has been a teacher in the school only seventeen weeks, and the marked progress of the pupils in this branch shows her to be a superior teacher of this department to which she has devoted herself. In order fitly to introduce this lady and her work to the public, special pains were taken on this occasion to make her exercises the most prominent and attractive feature of the examination.

Prof. Dwight conducted immediately afterward an exercise in gymnastics. The figures were accurately performed and in strict time. Some of them were very beautiful, particularly the one in triple time, which was accompanied by a graceful waltz movement on the piano. The senior class was then examined in astronomy. We were surprised at the accuracy of their demonstrations and their illustrations by means of the Celestial Indicator and various diagrams, proved how

thoroughly they knew what they attempted to explain. This was followed by an examination of the same class in Psychology by Prof. Carleton. It should be mentioned that the class use no text-books, the subject matter being taught orally by the Principal. The class evinced much careful thought in the recitation. They showed that a knowledge of the mind was essential to true and successful teaching, and although there was not time for an extended recitation on all the topics of applied psychology as the class had it during the term, they showed the excellence of their training in this important branch by placing schemes upon the board, and by the prompt and intelligent answers given to various questions proposed to them. We were convinced of the inestimable value of such a course to a teacher. Two songs were then sung by the school. The solos in the first were taken by Mrs. Buck of the junior, and Miss Annie Bradley of the senior class.

Miss Bush, an assistant pupil in the school, was then allowed ten minutes for a drill in map drawing. In this short time a fine map of Europe was placed on the black-board by each member of the class and quite an extended description of the continent was also given. The next ten minutes were filled with readings by Mr. Bingham and Miss Ludella Peck, under the direction of Prof. Hibbard, the teacher of elocution. Mr. Bingham read in a clear, easy manner, and by his nice inflections brought out many fine points. The reading by Miss Peck was unusually good. To a particularly fine voice Miss Peck adds an appreciation of her subject, an intensity of feeling, and a pathos which makes her reading very impressive. The exercises of the morning closed with another song written by L. O. Emerson, entitled "Star of Descending Night."

THE AFTERNOON EXERCISES.

At about two o'clock a large audience assembled in the South church to witness the graduation of the senior class. In addition to the gentlemen who were present in the morning, were His Excellency Gov. Jewell, Rev. Dr. J. C. Bodwell, of the Hartford Theological Seminary; Hon. Henry Barnard, of Hartford; Hon. Henry P. Haven, of New London; Dr. E. W. Hatch, of Meriden; Mr. S. M. Capron, of the Hartford High School; and others. As the class entered the audience room of the church, Dr. Barnett played some inspiring strains from *Il Puritani*, on the organ. The exercises were opened with a short prayer by President Andrews, followed by an "Ode to Education" by the choir. Next in order came the reading of the essays by the senior class. Our limits will allow us to do little more than to mention them, but all reflected much credit upon the readers and the school.

The first was read by Miss Louise E. Brown, of Clinton. The subject of her essay was "Forbid them not." In a quiet, attractive manner, she showed in how many ways the people of to-day and of this State are forbid-

ding the little ones to gain the education they should, by their incompetent teachers, and their dilapidated school houses. Her manner was easy and her elocution especially fine.

Miss Abbie P. Weaver, of Derby, followed with an essay on "Perfect Lessons."

"The Glory of Leading" was the subject of the next essay, very neatly read by Miss Belle B. Chapman, of Hartford.

"Behind the Desk" was a pleasing essay, written and delivered by Miss Achsah A. Wright, of Clinton. She contrasted the old-fashioned pedagogue of the past, with the teacher as he should be to-day, full of kindly sympathy, and ever willing to help his pupil and lead him to high and noble aspirations. If Miss Wright carries out her ideal of a teacher in her own work we have no doubt of her success.

Miss Ella Huntington was obliged, on account of ill health, to omit the reading of her essay, "In the Germ."

Miss Alice L. Hough, of Wallingford, read "The Face over the Shoulder," an essay full of quiet humor.

Miss Annie E. Bradley, of Simsbury, described the effect of literature, religion, and sympathy, on the pathway of this life, in an essay entitled "Light on the Path."

"Women Wanted," by Miss Josephine L. Shattuck, of Groton, Mass., was of a style and character to render it attractive to the audience. She proved that woman had been of use in the world in some of its great movements, and, being the mother of mankind, and thus having the moulding of the youthful mind, had an influence beyond measure. She reasoned from the Bible that as man was commanded to till the ground and cultivate the soil from which he was made, we are left to infer that woman must cultivate the man from whose side she was taken.

Miss Adele J. Burr, of Haddam, read a very well written essay on "The Lower and The Upper Side." It was one of the best written of the afternoon.

The oration on "The Sciences of Nature," by Mr. James F. Goodell, was a strong, well written, and forcibly delivered production. He showed that science is becoming a necessary and yet an ennobling study, and that fears of its evil tendency are in the main quite groundless.

The gem of the day was the essay on "Caricature," with the Valedictories, given by Miss Celeste E. Bush, of Niantic. Between that which is allowed by all to be good and that which all accept as bad, there is a debatable ground occupied by caricature. She showed that in some instances caricature has a decidedly good effect, and in others not only a cruel but wrong influence is exerted by this power. She quoted Dickens as an example of one who by this power had done much in suppressing some wrongs which deserved no stronger condemnation, and which could be reached by no less personal instrumentality. Thomas Nast, too, though he had, during

the last Presidential campaign, done good by holding up to the scoffing world the vice he would condemn, had yet inflicted needless pain, and subjected to this "refined cruelty" some who deserved better treatment at his hands. She closed her very effective essay by cautioning teachers to beware of the use of this weapon. Her valedictories were very finely written and most touchingly given.

After a few appropriate words to the class, His Excellency, Gov. Jewell, presented to them their diplomas. The parting hymn was then sung. The music was composed by Dr. Barnett, the words being written by Miss Hough of the graduating class.

At this point, Professor Carleton transferred the charge of the exercises to Governor Jewell who made a short address. He praised the people of New Britain for their full attendance on this occasion, saying that on some former occasions he had noticed a deficiency of interest on their part. He also commended and thanked Dr. Barnett and the choir for their voluntary services in furnishing the most excellent music.

The Governor then called up several gentlemen who made fitting remarks.

Rev. S. Rockwell, whose attentions had been attracted by the excellence of the drawing exercises in the morning, remarked upon the value and importance of that branch of education. He said that it had been greatly under-estimated, and should be pressed upon the state and the nation. If the eye is properly educated there will be more unity of opinion in estimating the true and the beautiful. He then said that while he had taken much pleasure in witnessing from year to year the progress of the Normal School, he now had the additional pleasure of seeing seated in the audience, one of the founders of the school, and one of its most devoted friends in past days,—the Hon. Henry Barnard. Saying that he was indebted to that gentleman for some of the very best thoughts on education he ever had, and that his history for the last thirty years was the history of common school education in the State and land, he called upon Mr. Barnard to favor the audience with a few words.

Hon. Henry Barnard rose in response to this call and gave an interesting statement in regard to the presence and mission of Prof. Heickel of Finland, and the wonderful progress in the public educational institutions of that Duchy. He then made the following forcible remarks concerning the importance of Normal school training:

"Twenty years ago I was almost scoffed at, when I said the hill-tops were reddening with the dawn of a day when there would be a fundamental change; when teachers would be trained for the work of their schools. Not a voice responded in the Legislature. When I succeeded in carrying through one branch of the Legislature a small appropriation for a Normal School, I could not get

it through the other branch. Now it is received as an adopted system all over the world.

I could not but feel a sympathy with him who stood up here, in the graduating class, as the sole representative of our sex—the last of the Mohicans. It seems plainly to be our duty to strive to bring more of the men into the field—men of talent and culture—to hold out sufficient inducements to our young men to enter this profession. While we need all, and more, of our accomplished women, we need more men well-trained.

To the people of New Britain I would say a few words. On some occasions you have not shown as much interest in the Normal School as you might have shown. You may depend upon it, that not all your manufactories and other enterprises taken together, will bring you the reputation and influence outside of this place, conferred upon you by this institution and by the educated young men and women thus living among you. It is in your power on all such occasions as this, by leaving your business, to come up here with your sympathies, and to show that you know this work to be at least as important as your shops. If what the Governor said is true, it is exactly what was urged strongly against the location of the Normal School here at the time that it was founded. There were many who objected; they said, 'The people of New Britain are too busy making money, to attend to school institutions.' It was also well said by some one at that time 'It is not money that makes the success of such an institution; it is the living interest of the community in which it is placed, without which, it cannot grow, with which, it will surely flourish.' An institution where your sons and daughters can have a good education, but more, an institution so generous, so christian, will bring into your city and your houses, more thrift and more honor than can otherwise possibly be brought."

Prof. Heickel, of Finland, then addressed a few words to the audience through Dr. Barnard, distrusting his own command of English, which is however very good. He spoke of the excellent impressions he had already received from our schools and of the essential difference in one respect between our public education and that of Finland. There, government originates all the institutions; here, the people originate them.

President Andrews, of Marietta College, said that these exercises carried him back to his earlier days and that he felt that if he could have had in his youth the advantages that these young people have, he might have made a better teacher, veteran as he was. He had in former years opposed Normal Schools. He had thought that if he taught his pupils Algebra, they should be able to teach it as well in turn. And he felt somewhat so still. Yet man is greater than a book, and there is art in teaching, and the question is, shall a man or woman learn all this by their own long and slow experience, or at the Normal School. Ohio has no State Normal School. It has a private Normal School which

claims to be a great one, and makes great boasts. It publishes such letters as that from one of its graduates studying in Hartford Theological Seminary, who wrote that his normal training enabled him to study three or four times as much as any other student. If a Normal School says that its way is the whole of it and all outside is darkness, then its work is questionable. He then urged these young teachers to be modest in their expectations; not to be yearning to teach Moral Philosophy or Butler's Analogy. He said he would go a hundred miles to see a man or woman who could teach a child to read.

Rev. Dr. Bodwell, of Hartford, then addressed himself particularly to the ladies of the graduating class, urging them not to keep school more than six hours out of the twenty-four. Spending too much time in school work takes the life-juices out of one. Lock every study up in the school-room when you leave it. Better have Middlemarch or Longfellow's poems on your table at home than Calkins. He then spoke of the importance of paying attention to full-voiced and well articulated elocution.

Hon. W. H. Potter gave a few words of sound advice to young teachers, urging upon them patience with dull pupils. He advised them not to give all their attention to the geniuses in their classes; this would kill them; but to attend to the dull ones. Teachers should try to get a correct idea of the capacity of every scholar. There are those who will decide at once by the eye about a pupil's character, and correctly, ninety-nine times out of a hundred. Do this at once, and the first blow will be struck intelligently. When the blacksmith heats up the iron and puts it on the anvil, the first blow is as important as the last blow; and so with the teacher and pupil. If a teacher would be successful, let him have an intelligent idea of the character of his material, at the first, and then work with unremitting patience.

The exercises were closed with the benediction, pronounced by Rev. J. V. Schofield of New Britain.

SOCIAL ASSEMBLY IN THE EVENING.

In the evening the First class of '73 received a large number of their friends in the Normal Hall. The time was delightfully passed with conversation and music. The most pleasing occurrence of the evening was a presentation to Miss Ella S. Smith, who retired from her position as teacher at the close of the term, after faithful and valuable service for three years. The gift selected by the school in token of their esteem, was an elegant silver pitcher, goblets, and salver. They were presented, in behalf of the donors, by a young gentleman of the coming senior class, with appropriate words, to which Miss Smith gracefully responded.

To supply the vacancy made by this resignation, Miss Celeste E. Bush, of whom mention has been made, and Miss Ella J. Gibbs, of Framingham, Mass., have been employed by the State, and will enter immediately upon their duties.

The next term opens with an examination of candidates for admission, on Monday, Feb. 3, 1873, at 2 P. M. A class of about twenty-four members is expected to graduate in July.

WESTPORT.

Many of the good people of Westport are beginning to feel that the time has come when a graded school, containing what is sometimes called a high school department, should be established in their community. The five select schools now in existence there, for the most part, admit girls only, and hence it comes about that the older boys of the place are left destitute of sufficient opportunity to receive, at home, instruction in the higher branches. During the last six months, considerable effort has been made to establish a graded school, but without success thus far. It cannot be, however, that a town enterprising enough to consolidate its school districts, will long delay to furnish its youth with high school privileges.

There are ten districts in Westport, and in some of these in which there are over one hundred children of school age, but one teacher is employed. The Cross Highway district has the best schoolhouse in town. Miss Mary A. Buckley has taught in this district for some three years now, with excellent success, and this winter her labors are giving great satisfaction.

Mr. Thomas D. Elwood still continues to conduct the school in the Center district and is as popular there as ever.

The veteran teacher in the Saugatuck district, Mr. James Sherwood, is noted as an excellent disciplinarian, and his school this term, is prospering finely, under his able administration.

The West Long Lots district does well to continue Miss Emily Bradley in the position which she has filled so successfully now for three years, we believe.

Miss Croft, Shercrow district, has an enviable reputation as a teacher, and she is well maintaining it this winter. Respecting the other districts in this town we have not sufficient information to venture a report at this time.

TERRYVILLE.

The Graded School in this village is reported as being in a very flourishing condition under the administration of Mr. Livingston C. Lord, its present Principal. Mr. Lord is a graduate of the State Normal School at New Britain, in the class of 1871, and during his year and a half of teaching in Terryville has won his way to great popularity, and a high degree of efficiency as a teacher.

HAZARDVILLE.

Hazardville has had the good fortune to secure for principal of its Graded School, Mr. John Coats, a graduate of Yale College. Mr. Coats is recently from Chi-

cago, and entered upon the duties of his present position about the first of December last. He was formerly, for a year, teacher of Mathematics in the Connecticut Literary Institute at Suffield, where he proved that, in addition to fine scholarship, he possessed the ability to teach well.

WINDSOR LOCKS.

The Union Schoolhouse in this place was damaged by fire to the amount of \$500, on Sunday, Jan. 20th. We are glad to learn that the loss is fully covered by insurance in Hartford offices.

LYME.

The people of North Lyme are feeling that they have a superior teacher for their school in Miss Ellen P. Ely, of East Berlin. This lady has succeeded in bringing up the attendance to something remarkable for this place, seven pupils of her school not having been absent for a day, thus far, this winter.

GROTON.

The eighth district in this town has just completed a new school house at a cost of \$1000.

MIDDLEFIELD.

The South school commenced a new term on Monday, Jan. 27th, under Miss Louise E. Brown, of Clinton, as principal, and Miss Alice Birdsey, as assistant teacher. Miss Brown graduated at the State Normal School on the 17th of Jan., and began teaching after a vacation of only ten days.

DANBURY.

Miss Esther St. J. Chapman, of Westport, has become teacher of the Primary department in the Center School, New street, Mr. J. M. Smith, Principal. She takes the place of Mrs. Hubbell, who goes to New Haven as assistant matron and teacher in the Home of the Friendless.

STRONG COMSTOCK, who has been teaching in Ansonia is now in Walton, Delaware Co., N.Y. We presume he is teaching in the Seminary, as this was his old place.

BOOK NOTICES.

THE FORMS OF WATER. By John Tyndall, LL. D., F. R. S. Published by D. Appleton & Company, New York City.

This admirable treatise is the pioneer of the "International Scientific Series," initiated by Appleton & Company. A word about this series;—it has not been thrust upon the public as a hopeful venture; it has grown right up on the most natural roots. Fifteen or twenty years ago, the starting of such a series would have been quite one-sided, and would have succeeded,

if at all, only by sheer pushing. Then, the public cared little for science; then, the great masters of science, scorned to write for the common understanding. But since those times, some great veil has been rent in twain. Now the reading masses are all athirst for scientific knowledge; now the most eminent scientists are ready, with the utmost cheerfulness, to cross the ocean, and to cultivate the gifts of the plainest talk, to enlighten the common people.

Thus this enterprise of popularizing science has grown up spontaneously. The people *will have* this knowledge; the publishers of this series have simply undertaken to see that by much painstaking, solicitation and expense on their part, only that which is strictly reliable, because from only the most eminent sources, shall be furnished.

This leader of the series is on that subject which comes home to all of us—the forms of Water in clouds and Rivers, Ice and Glaciers. When we say that it is by John Tyndall, what more need be told to secure it a prompt reading? For to say that Tyndall wrote it, is to say that every word of it has the stamp of as perfect accuracy as science can furnish, and also that its language will be graphic and entertaining. Prof. Tyndall is a man of flesh and blood, as well as of brains. We seem to be walking and talking with some warm, but wonderfully learned friend as we follow him chapter after chapter in his various books. He always writes like a man who has never got rid of the bracing inspiring air of the Alpine Heights he has so often climbed. Certainly it will freshen up any one's mind to his work, to read the vivacious chapters of this book.

OUR WORLD. No. 2; or Second Series of Lessons in Geography. By Mary L. Hall. Published by Ginn Brothers, Boston.

Number One of this series appeared several years ago in the shape of a charming little book of primary instructions in Geography, very simple and conversational in tone. The present work is intended as a complete instruction book for higher scholars, containing all that is commonly needed of geographical knowledge. The authoress, Miss Mary L. Hall, is a teacher of ripe experience; her instructions are of that vivacious, progressive kind which meet with the most cordial approval of such educators as Miss Elizabeth P. Peabody. This latest result of her labors is, as we might expect, a most admirable work. It is drawn up in the most interesting style, reading almost like a novel from beginning to end. At the same time it is arranged in careful method, treating successively of the history, political divisions, physical features, the local characteristics, advantage, employments, customs, etc. of the sections under consideration. The amount of information on these various topics is quite profuse—perhaps too much so sometimes. It is certainly questionable whether even the amount of history which is here given, ought to have any place in a School Geography. The maps are clear,

and so constructed as to exhibit readily the prominent physical features of the various countries. The illustrations are quite numerous and pleasing; and the publishers have combined with the authoress in making this one of the most attractive books to put into the hands of our children.

Let us hope that experience will also prove it to be firmly bound. Flimsy binding is the crying evil of our literary history. We have noticed especially in the case of geographies that they hardly hold together long enough to be examined. The present volume appears to be solidly put together; if experience prove this to be the case it will be a merit, rare indeed in these days, but of the highest order.

LIGHT. By Jacob Abbott. Published by Harper & Brothers, New York City.

This book is worth dozens and dozens of story books to put into the libraries of our boys and girls. Excellent as are the "Franconia Stories" and the "Marco Paul Series" of the Author, they are entirely overshadowed in usefulness by this work. Yet we believe it will prove hardly less interesting to many young readers. We are not so sanguine as to think that all boys and girls are going to put aside their Rollo books for these charming conversations on science; but we know that many of these young minds are just ripe enough to do it, and that many more by a little judicious encouragement will give such books as these almost an equal place in their pleasures, as their story books. We hardly know a choicer gift of its value that can be made to a intelligent lad or lass of twelve, than this exceedingly neat book on Light.

CIRCULARS OF INFORMATION of the Bureau of Education,

Our National Bureau of Education, under the auspices of Commissioner John Eaton, is doing a novel and invaluable service to educators by issuing in these circulars, documents of much educational importance, collected by the department. These could hardly reach the public in any other way, and will assist materially in the more perfect organization of our state systems. Congressmen may sneer at the utility of the Bureau, but in so doing they only show either their profound ignorance of what the progress demands, or a condition of political recklessness.

We can only mention the titles of those circulars that have reached us, recommending their perusal to our teachers:

- July, 1871—Report on the Systems of Public Instruction in Sweden and Norway.
- Dec., 1871—Compulsory Education.
- Jan., 1872—German and other Foreign Universities.
- Feb., 1872—Report on Systems of Public Instruction, in Greece, Argentine Republic, Chili and Ecuador, Statistics of Portugal, Technical Education in Italy.
- Mar., 1872—Vital Statistics of College Graduates; Distribution of College Students in 1870-1; Vital Statistics in U. S.

June, 1872—Education in British West Indies.

July, 1872—The Kindergarten.

Nov., 1872—American Education at the coming Austrian Exposition.

LA GRAMMAIRE EN ACTION. By Professor B. Maurice, A. M., late Assistant Professor U. S. Navy Academy. Philadelphia, J. B. Lippincott & Co., 1873.

A convenient text-book for the use of French classes that have made some proficiency in the language, and become familiar with the ordinary rules of grammar. It contains the play "Lady of Lyons" (Bulwer) with a convenient selection of rules required for its translation from English into French, as also a vocabulary, with explanatory notes on idiomatic expressions.

PERIODICALS.

SCHOOL JOURNALS FOR JANUARY.

The Iowa School Journal, which is taking so excellent a place among its compeers, contains two valuable articles on "The Scientific Spirit," from a late lecture by the Bishop of Exeter, and "Mental Arithmetic in a System of Education," by James M. Greenwood.

The leading article in the *Maine Journal of Education* is "The Teacher's Preparation for Work of the School Room."

The California Teacher has but one article of general interest but that is a long and elaborate paper on "Arithmetic" by Wiedemann of Dresden, translated by Mrs. Lane.

We notice in the *Michigan Teacher* some good thoughts on "Drawing as a Branch of Education," and an editorial neatly rebuking an unworthy remark by a writer in the *Christian Union* against "School Journalism."

In the *Chicago Schoolmaster* is an excellent little paper "What and How Before Why," by Thomas Metcalf.

In the *Massachusetts Teacher*, the paper on "Latin as a Means of Education" will be read and will renew an ever-abiding discussion.

The National Normal has an article on "Object Illustrations," and one on "Method of Teaching Numeration and Decimals;" also an editorial on "Egotism"—German Egotism, however.

"Technical Education," by Gilbert Butler, in the *Pennsylvania School Journal* is an interesting resume of the subject. We thank this journal for its good will towards the CONNECTICUT SCHOOL JOURNAL as expressed in an editorial.

The Wisconsin Journal of Education gives us "A Plan for Town Superintendency," by W. N. Holford; and the *New York State Educational Journal*, "Froebel's Kindergarten," by Miss Elizabeth Peabody, and a good article on "How Shall Children Learn Grammar," by the editor, O. R. Burchard.

The New York School Journal has a lively article on "School Examinations," and an editorial on "Pensioning Teachers."

The Western asks and answers the question, "Do Teachers Teach?"

The first number of the Ontario Teacher, published at Strathroy, Ont., has reached us. It has a neat and promising appearance, and presents a variety of readable articles, among which are "A Leaf from my Inspector's Book" and "The Spirit and Qualifications of the True Teacher."

Of numerous other Journals, including some of the best, our present limits will forbid our speaking at this time.

The Popular Science Monthly for January, comes to our table full of good things. This is a truly noble journal of scientific information, and this information is given in just that strictly reliable yet popularized form which fits it to the wants of the Teacher. We believe it to be the duty of a teacher to avail himself of some journal of this kind. The more intelligent of the public are making themselves familiar with these instructive papers, and teachers cannot afford to be behind them. This particular number is an excellent one, and we notice with pleasure a timely editorial on observation in education, both important and true.

WHAT WE WANT TO KNOW.

Every teacher and every acting school visitor in the State can contribute very materially to the advancement of the cause of education by an earnest coöperation with the SCHOOL JOURNAL in gathering and disseminating school news. It is a spur to one district to know of progress in another. A new idea is originated by one, and the rest of the world want to be benefited by it. We desire to make the JOURNAL more eminently a news journal than ever before. We cannot obtain this news except it be furnished us by you. In order that you may be guided in what to send, we will give you an outline of what we want.

In the first place, we want to know what has transpired. If you have built a new school house we want to know it.

If you have painted your old school house and put a bell on it, as you ought to do, no doubt, we want to know it.

If you have torn out your old awkward hard seats and put in some modern ones, we want to know it.

If you have bought a new globe or tellurion, or any other school apparatus, we want to know it.

If you have had a spelling school and John Jones has spelled down the whole village and challenged the next town, we want to know it.

If any parents of your pupils have visited your school during the past five years, it would probably be a wonder in the district, and the rest of Connecticut people want to know it.

If Susan Smith, the "school marm" has given up teaching and "got married," we want to know it.

If you have thrown out any school books and put in new ones, we want to know it.

If you have had a new acting school visitor appointed, we want to know it.

If you have a new teacher in your district, we want to know it.

If any of your scholars are intending to fit for teachers, we want to know it.

If you have found any plan or method to work well in teaching or disciplining, we want to know it.

If you have anything whatever pertaining to your school that might interest others, we want to know it.

In the next place, we want to learn what you intend doing.

If you are intending to do anything that has been mentioned above, we would like to be informed of it. Every teacher and every acting school visitor has knowledge of plans that are being laid and ways and means devised in their various localities in respect to schools and school work that would be of interest to all others in the State, engaged in similar work. Do not hesitate to write to us because you cannot handle a pen as dexterously as Prof. Gaskell of Manchester, N. H., or because you cannot always spell as correctly as John Jones, the champion spellist of Podunk Valley. If you should happen to spell bell, *Bel*, we should not think that you were going to put an idol on your school house to worship, or so inform the good heathenish people of Connecticut. Write to us. Write to us freely; write to us every month, at New Britain.

PUBLISHERS NOTES.

— Persons desiring receipted bills for their subscriptions should enclose stamp for return letter.

— We would return thanks to the various parties who so promptly responded in sending us the December number of the SCHOOL JOURNAL. In completing files for last year we find that we are quite short of November numbers.

— All hail to Norwich! The good old town rolls up a big list this year for the JOURNAL. Danbury and Hartford stood equal last year; but where are they this?

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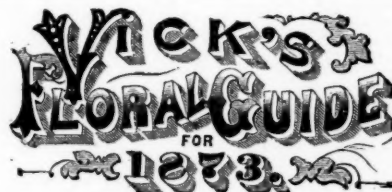
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